

In the course of local collection trips about 10 examples of this species were collected from various localities as Adayar and Ennore estuaries, Cooum River and Kovelong beach.

The records of this species around Bombay and Madras indicate its wide distribution along the Indian coast.

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ZOOLOGICAL SURVEY OF INDIA,
SOUTHERN REGIONAL STATION,
MADRAS-4, TAMIL NADU,
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T. S. N. MURTHY

15. THE OCCURRENCE OF *PENNAHIA MACROCEPHALUS* (TANG) (PISCES: SCIAENIDAE) IN INDIAN SEAS

During our studies on the taxonomy of Sciaenids of the Hooghly estuary, two specimens of *Pennahia macrocephalus* (Tang), hitherto unreported from Indian Seas, were determined. This species has been previously reported only from South and East China Sea (Chu, Lo & Wu 1963). Subsequently, we came across five more examples of this species from the Orissa and Madras coast in the collections of Zoological Survey of India.

Tang (1937) described the species under *Pseudosciaena* Bleeker. Subsequent workers (Lin 1940; Chu, Lo & Wu 1963) assigned it to *Argyrosomus* de la Pylaie. The assignment of this species to either of these genera is considered inappropriate since *Pseudosciaena* is a junior synonym of *Argyrosomus* (Trewaves 1965) and the air bladder appendages in this species are not divided into a dorsal and a ventral limb as in the type species of *Argyrosomus*. The species is, therefore, treated under the genus *Pennahia* Fowler, 1926. As the present report is the first record of occurrence of *Pennahia macrocephalus* (Tang) in Indian waters, a description of the species is given below:

***Pennahia macrocephalus* (Tang)**

Johnius aneus Fowler, 1933, p. 376.

Pseudosciaena macrocephalus Tang, 1937, p. 70, pl. 1, fig. 2.

Argyrosomus macrocephalus Lin, 1940, p. 250, fig. 4; Chu, Lo & Wu, 1963, p. 59 fig. 34.

Dx. 1+24-25; A. 11+7; P. 15-17; L. I. 50-52; L. tr. 7-8/11-12; G.R. 6-7+12.

In percentage of standard length: depth of body 33.3-41.1; head length 33.6-37.5; snout length 7.7-11.3; eye diameter 10.5-12.2; inter-orbital distance 9.5-11.3; postorbital distance 16.3-19.7; length of lower jaw 13.3-15.6; length of maxilla 16.1-19.2; pectoral fin length 25.2-30.2; pelvic fin length 20.0-22.0 and length of second anal spine 10.3-12.2.

Body oblong, compressed. Mouth terminal, oblique; maxilla extends to hind edge of pupil. Pores: snout with 3 pores; lower jaw with 3 pairs of pores at symphysis, anterior and posterior pairs inconspicuous. Teeth: Villiform in both jaws; outer row of upper jaw and inner row of lower jaw of distantly placed enlarged teeth. Scales: on head and anterior part of body cycloid; on posterior part of body weakly ctenoid. Fins: Dorsal shallowly incised, 3rd spine the longest. Second anal spine stout, 2/3rd of first anal ray. Caudal cuneate. Air bladder: Carrot shaped Otolithini type with 18 pairs of arborescent diverticula. Sonific muscles absent in the two male specimens examined.

Colour in alcohol:

Grayish on back and upper half of body, lower half silvery. Tips of spinous dorsal, upper half of soft dorsal and caudal dusky. Opercle with a bluish blotch; pectoral axil dark.

MATERIAL

No. 11371, 1.88 mm. S.L.; Hooghly; 18.12.1885; J. Barnett.

No. 6061/2, 1, 126 mm. S.L.; Hooghly; 5.11.27; Capt. Park.

No. 12107, No. 12108, No. 12110, No. 12128 - 4, 90-115 mm. S. L.; Orissa; Marine Survey.

No. F 1136/2, 1, 182 mm. S.L.; Portonovo; 22.1.57; A. G. K. Menon. (Madras).

Remarks:

Our specimens agree well with Lin's (1940) and Chu, Lo & Wu's (1963) description of this species except in having a lower dorsal count (X.1.24 vs. X.1.27).

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ZOOLOGICAL SURVEY OF INDIA,
27, JAWAHARLAL NEHRU ROAD,
CALCUTTA-13,

ASHA JOGLEKAR
P. K. TALWAR

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* Not consulted in original.

16. OBSERVATIONS ON THE BREEDING GROUND AND DEVELOPMENT OF THE CHILKA MULLET *LIZA MACROLEPIS* (SMITH)

Liza macrolepis, known locally as 'Dangla', forms a commercial fishery in Chilka Lake. In growth and size the fish can be grouped among the larger mullets. The present observations on the breeding ground of 'Dangla' would therefore be of interest from the point of view of both conservation and development of the fishery of this species.

The occurrence of 'Dangla' eggs was first noted in the tow net collections made on 27th November 1964 at about 10.30 hrs. on the right bank of the outer channel near lakemouth. An examination of the eggs revealed the characteristic large oil globule and unsegmented yolk. Since these are important features of mullet eggs and as mature specimens of *L. macrolepis* and *M. cephalus* occurred predominantly in the catches of outer channel during this period an attempt was made to collect the running ovary of these species.

On 28.xi.64 at about 04.00 hours it was possible to collect the oozing ova from a specimen of *L. macrolepis* captured at lakemouth. The oil globule was already formed in the oozing ova and they resembled in appearance and other details the eggs in tow net collections made on 27.xi.64. The eggs appeared to swell very little after fertilisation. There is, thus, little doubt that the 'tow net eggs' belonged to *L. macrolepis*. As eggs in the early and late stages of development occurred at lakemouth as well as up to 2 miles interior of outer channel it may be assumed that lakemouth and inshore areas of sea proximal of lakemouth form the breeding zone of this species. The findings of Jhingran (1958) and Jhingran *et al.* (1963) on the seaward migration of 'Dangla' and its likely breeding ground near lakemouth were thus confirmed.

The present findings indicate that 'Dangla' spawn at about midnight. The total period of embryonic development may be around 26 or 27